Welcome to this review of the ERS (European Respiratory Society)
Meeting 2017. Balloons over Milan! I guess 22,000 participants and delegates to the largest Respiratory Society meeting shouldn’t even attempt to go unnoticed. The conference was accompanied by a significant campaign raising awareness of respiratory illness and the effect of air pollution and smoking, with the theme ‘Breathe Clean Air’. Coming from NZ smoking appears very prevalent in Europe; however, Italy is making progress regarding smoking cessation. Prof Stefan Andreas reminded us about the cost effectiveness of simple smoking cessation advice with this statement: giving smoking cessation advice to 100 patients saves as many lives as 100 cardiac catheters. Of 100 people who have a myocardial infarction, about 10% are at risk of a further infarct, and of these people, about 20% will benefit from a cardiac stent. That is two lives saved out of 100 stents postinfarct. If we advise people to stop smoking in our daily practice, about 4–6% will stop smoking, and for half of them it will prolong their lives; that is also two lives saved for 100 post-infarct stents.

“This meeting is reassuring that we are pretty much ‘on the mark’ with the treatment we offer in New Zealand” was the reflection of one of my colleagues after a brilliant 7.00am session on pulmonary arterial hypertension delivered by the key specialists in the field: Olivier Sitbon, Sean Gaine, Joan Albert Barbera and Jean-Luc Vachiery. The conference was also the forum to introduce new guidelines, like on the management of bronchiectasis, and present truly ground-breaking data on new agents for the management of IPF (idiopathic pulmonary fibrosis), like the outcomes of the PRAISE study on the effect of pamrevlumab.

An overarching theme at the conference was the impact of information technologies and big data on medicine. The European Respiratory Society is proactive in supporting large consortia, e.g. in bronchiectasis or tuberculosis. It also provides some independent guardianship on these technologies. For example, more than 25,000 apps exist for asthma management alone, but with very variable quality control. The EU (European Union) is funding a programme, working with universities, patient organisations and information technology providers, towards tailored and targeted asthma self-management. The programme collects data from the physical environment and behavioural patterns to produce visual analytics and collects data for everyone to aid in management decision; check it out at www.myaircoach.eu.

Finally, with close to 4000 abstracts presented, a selection of a dozen abstracts will always introduce a bias, and as always, we are happy to engage in an exchange of ideas. By selecting these abstracts, we have tried to cover topics of asthma, COPD, pneumothorax, bronchiectasis, ILD (interstitial lung disease), pulmonary embolism and smoking cessation.

We hope you enjoy the selection.

Kind regards
Dr Lutz Beckert
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Independent commentary by Professor Lutz Beckert.

Professor Lutz Beckert is the Head of Department of Medicine of the University of Otago, Christchurch. He is also a Respiratory Physician at Canterbury District Health Board with particular clinical interests in interstitial lung disease, pulmonary vascular disease, respiratory physiology and COPD (chronic obstructive pulmonary disease). Lutz is happy to be contacted to discuss research ideas either as a sounding board or with the view of future collaborations.

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Research Review publications are intended for New Zealand health professionals.
Fear of anxiety symptoms in asthma, lung cancer patients and healthy subjects
Authors: Basara L et al.
Summary: Sensitivities to anxiety symptoms, measured using the 16-item ASI (Anxiety Sensitivity Index), were compared for 52 patients with asthma, 17 patients with lung cancer and 52 healthy subjects in this research. Patients with asthma and those with cancer had higher anxiety sensitivity scores than the healthy controls (25 and 27.65, respectively, vs. 15.56 [p<0.05]), with no significant difference between the asthma and cancer groups.
Comment: This research was led by a clinical psychologist at the University Centre in Zagreb, Serbia. She noticed that patients with lung cancer seemed just as anxious about their illness as patients with asthma. In her poster, she presented data obtained by systematically applying the validated ASI tool on 52 controls, 52 patients with asthma and 12 patients with lung cancer. She found a low score in healthy controls and an anxiety score just as high in patients with cancer as in patients with asthma. Bottom line: patients with asthma express as much fear of physical symptoms and anxiety about their illness as patients with lung cancer.

Poster 4233

Are there any psychological impacts in patients after spontaneous pneumothorax?
Authors: Cherif H et al.
Summary: Psychological factors associated with intercostal drainage for spontaneous pneumothorax were explored in a group of participants from a dedicated pneumothorax group on Facebook. An online form containing 16 questions was made available to the participants, for which 63 responses were received; 57.6% of responders were smokers. Intercostal drainage was performed, for mean of 7.3 days, in 92% of the participants. The pneumothorax recurrence rate was 66.6% with an average delay of 6.63 months. Daily worry about recurrence was reported by 57.9% of the respondents and 17.2% rarely worried about recurrence. Reported concerns included recurrence of pain in 69%, intercostal drainage in 50% and surgery in 50%. Residual pain around the thorax and on the scar was reported by 62.3% and 37.7% of respondents, respectively, with 60% reporting that such pain manifested as a consequence of effort, 18% reporting simultaneous fear of recurrence, and half reporting that the pain was continuous.
Comment: A pneumothorax is another illness that is more of a ‘nuisance’ than a life-threatening illness. Researchers from Tunisia created a Facebook page dedicated to spontaneous pneumothorax. While their data are not systematic and exposed to bias, it still provides interesting insights from 63 young smokers, mainly men. All were treated with a chest drain for a mean duration of 7.3 days, and after an about half a year 66% experienced a relapse. The most interesting finding from these people who had self-selected onto a Facebook page was, bottom line: almost 60% lived in daily fear of recurrence and almost 90% of patients reported residual pain, half of who had daily continuous pain.

Poster 2783

Authors: Hallifax RJ et al.
Summary: Risk factors for pneumothorax recurrence were identified using primary-care data from the UK THIN (The Health Improvement Network) for episodes of spontaneous pneumothorax. The average annual incidences of spontaneous pneumothorax in 1995 for males and females were 19.3 and 8.1 per 100,000, respectively. Little change was seen in these incidences over the period 1995–2015. Two distinct age-group peaks were noted; patients aged 15–34 years had the greatest absolute number of consultations, although their incidence has been stable over the last 20 years and the recurrence rate was the same for both genders, of about 12% within a year. They presented a lovely curve with the new finding that, bottom line: pneumothoraces occur in two peaks, one in the 15- to 34-year-old group and a second higher peak in the over 65-year olds.

Comment: Staying with the topic of pneumothorax, this British group used the THIN national primary-care database to report that the incidence of pneumothorax was about 20 per 100,000 men and 8 per 100,000 women. The incidence has been stable over the last 20 years and the recurrence rate was the same for both genders, of about 12% within a year. They presented a lovely curve with the new finding that, bottom line: pneumothoraces occur in two peaks, one in the 15- to 34-year-old group and a second higher peak in the over 65-year olds.

Poster 2604

Sputum pregnancy zone protein (PZP) – a potential biomarker of bronchiectasis severity
Authors: Smith A et al.
Summary: The relationship between PZP and bronchiectasis severity was explored in this research involving 80 patients. The median PZP level in sputum was 25.7 ng/mL, and was significantly higher in females and in patients with Pseudomonas aeruginosa infection. Sputum PZP level was found to significantly correlate with Bronchiectasis Severity Index score, St. George’s Respiratory Questionnaire score, percent of predicted FEV1 (forced expiratory volume in 1 second) and Medical Research Council dyspnoea score, but not radiological severity, exacerbation frequency or lung function decline over 3 years. A strong relationship was also identified between PZP level and a number of neutrophil biomarkers, including sputum elastase, blood desmosine and total neutrophil count. Analyses of peripheral blood leucocytes revealed that neutrophils were the most likely sputum PZP source.

Comment: The winning poster and presentation in the session on the ‘clinical update on bronchiectasis’ was presented by a medical student from Aberdeen. In her search of a biomarker for bronchiectasis, she started with the observation that bronchiectasis is more prevalent in women. While searching protein arrays in a cohort of 80 patients with bronchiectasis, the PZP, which is related to oestrogen release not pregnancy, had a strong correlation with bronchiectasis. In a dose-response pattern, it was a marker of neutrophil dysfunction and severity of bronchiectasis. Bottom line: PZP may become a biomarker for disease activity and severity of bronchiectasis.

Oral presentation 1969

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PRAISE, a randomized, placebo-controlled, double-blind phase 2 clinical trial of pamrevlumab (FG-3019) in IPF patients

Authors: Gorina E et al.

Summary: The PRAISE trial enrolled 103 patients with IPF with FVC ≥55% predicted, DLCO ≥30% predicted and 10–50% lung fibrosis, and randomised them to receive 16 doses of intravenous pamrevlumab 30 mg/kg or placebo every 3 weeks. In addition, 36 patients receiving stable-dose pirfenidone and 21 receiving stable-dose nintedanib were enrolled for 24 weeks. The last enrolled participant completed participation in June 2017. Baseline demographics included 71.9% male, 88.8% white, 64.4% former smokers and mean age 68.3 years. The participants’ median percent of predicted FVC and DLCO were 70.3% and 51.5%, respectively, and their median IPF GAP index score was 4. Safety and efficacy results were presented at the meeting.

Comment: Pamrevlumab, a monoclonal antibody against connective tissue growth factor in fibrosis, is a potential new treatment for IPF; NZ participated in this study. The key findings were that pamrevlumab virtually stopped the fall in FVC. It had very few side effects and was safe in combination with pirfenidone or nintedanib. The investigators reported three deaths in the study, which were thought to be related to the severity of the illness and not pamrevlumab. Bottom line: this phase 2 study is promising and a phase 3 study is being planned; eventually we may be able to add pamrevlumab to our treatment of IPF.

Oral presentation 3400

Correlation between lung sounds and HRCT signs of pulmonary fibrosis

Authors: Sgalla G et al.

Summary: The relationship between ‘velcro’ crackles on chest auscultation and chest HRCT findings was explored in this study of three prospective cohorts of 273 patients undergoing HRCT for any clinical indication. Two expert thoracic radiologists independently, blindly reviewed 805 HRCT images for findings consistent with pulmonary fibrosis. Recorded pre-HRCT lung sounds were also blindly, independently assessed by two respiratory physicians for the presence of ‘velcro’ crackles. The following HRCT findings were found to be independently associated with the presence of ‘velcro’ crackles: extent of honeycombing (odds ratio 1.66 [95% CI 1.08, 2.53]), reticulation (1.72 [1.3, 2.27]) and ground-glass opacities (1.66 [1.23, 2.23]).

Comment: This clinical poster was presented from the Southampton group, exploring the utility of clinical signs, in this case, fine ‘velcro’ crackles in the chest. The researchers recorded chest auscultation sounds, which were then analysed by two respiratory physicians assessing the presence of ‘velcro’ crackles. The extent of honeycombing, reticulation and ground-glass opacity, as assessed by two blinded radiologists, matched the presence of crackles. Bottom line: auscultation of the chest is not a ‘lost art’; the detection of ‘velcro’ crackles correlates well with radiological patterns of fibrosis.

Poster abstract 865
e-Poster (pdf; 2.7MB)

Clubbing in patients with fibrotic interstitial lung diseases

Authors: van Manen MJG et al.

Summary: This research investigated the prevalence of clubbing, its associations with disease severity and agreement between different methods for its assessment in 153 outpatients with fibrotic ILDs from two tertiary referral centres. The methods by which clubbing was assessed were phalangeal depth ratio, Schamroth sign test and physician assessment. Prevalences ranged according to assessment method, and were 7–41% overall and 5–52% in patients with IPF; there was poor agreement among the assessment methods (κ values –0.3 to 0.2). No significant correlation was seen between clubbing and FVC or corrected DLCO.

Comment: Fine crepitations heard on auscultation of the lung have been shown to be useful; however, this may not be the case with finger clubbing. This group of researchers from Utrecht in the Netherlands recruited 153 patients with ILD with the aim of documenting the prevalence and exploring the relationship between the severity of clubbing and the severity of disease. Their results have been less encouraging; bottom line: there was poor clinical agreement on the presence or absence of clubbing, and the prevalence was estimated between 7% and 41%. There was no correlation between clubbing and disease severity.

Poster 870
The impact of dyspnoea and strategies used by lung fibrosis patients to relieve breathlessness

Authors: Cassidy N et al.

Summary: A structured Lickert-scale questionnaire was developed to assess the impact of dyspnoea and nonpharmacological techniques used in its management in 41 Irish Lung Fibrosis Association members with ILD, including 33 with IPF. The responses indicated that 48.8% took antifibrotic medication, 56.1% were oxygen-dependent and 58.5% exercised at home. Activities associated with dyspnoea included exercising (63%), climbing stairs (61%) and walking short distances (59%). Physical and emotional effects associated with dyspnoea were fatigue in 56%, stress in 37% and self-consciousness in 29%; 27% of respondents reported no change in how they felt. The most common solutions the respondents reported for managing their dyspnoea were cessation of physical exertion (71%), breathing techniques (66%), self-reassurance (59%) and adopting positions of ease (37%). Around two-thirds of respondents indicated that they never or rarely asked for assistance during dyspneic episodes, around half used mindfulness techniques and 81% reported use of hand-held fans.

Comment: This group of Irish researchers reported on the impact of breathlessness on activities of daily living, like getting dressed, the emotional impact this breathlessness has and the management strategies employed for this distressing and disabling symptom. Of the 41 patients who responded to the survey, more than half reported always being breathless while doing household work, going upstairs, exercising or even walking short distances. The most common emotional complaint was tiredness, followed by stress and self-consciousness. Bottom line: most patients used nonpharmacological strategies to manage their breathlessness, like stopping, self-assurance, breathing technique and change of position.

Poster 2957
E-poster (pdf; 519KB)

AmbOx trial: does ambulatory oxygen improve quality of life in patients with fibrotic interstitial lung disease?

Authors: Visca D et al.

Summary: Patients with fibrotic ILD (n=76; 43 with IPF) whose SaO decreased to <88% during a 6MWD test received 2 weeks of ambulatory oxygen and 2 weeks without this in a randomised crossover manner after a 2-week run-in period with stable symptoms. Compared with no oxygen, ambulatory oxygen significantly improved total KBILD score (difference, 3.7 points [p<0.0001]), including the breathlessness and activity domain (8.7 points [p<0.0001]) and chest symptoms domain (7.6 points [p=0.009]), but not the psychological domain. A reduction in symptoms and increased activity were reported by most participants during ambulatory oxygen use, although some raised concerns regarding storage and dependency. Serious adverse events did not differ significantly between the two conditions and were not related to use of ambulatory oxygen.

Comment: This long-awaited multicentre study on the utility of ambulatory oxygen use on QOL in patients with ILD with daytime hypoxia was presented at the ERS in Milan. About half of the patients randomised to portable oxygen or no oxygen had IPF. While the use of oxygen was cumbersome, patients reported less breathlessness and fewer chest symptoms, but no psychological benefits. Bottom line: the use of ambulatory oxygen by patients with ILD was associated with improved 6MWD and QOL.

Poster 2961

Smoking cessation in Europe: trends in methods used in the European Union between 2012 and 2014

Authors: Vardavas C et al.

Summary: This research presented trends and patterns of self-reported use of smoking cessation methods among smokers in the EU using data from the 2012 (n=9921) and 2014 (n=9959) waves of the Special Eurobarometer for Tobacco survey. Between 2012 and 2014, there were decreases in quitting without assistance (from 70.3% to 65.3%), use of nicotine replacement therapy (from 14.6% to 12.2%) and use of healthcare professional and smoking cessation clinic resources (from 6.7% to 5.0%), while experimentation with e-cigarettes for quitting increased (from 3.7% to 11.0%). Experimentation with e-cigarettes was more likely in younger individuals or those with difficulty paying bills (adjusted odds ratio 4.12 [95% CI 3.23, 5.27]), and these individuals were also less likely to have consulted a healthcare professional (0.39 [0.27, 0.56]). There were significant differences among EU member states.

Comment: Smoking cessation is always important at a conference where many key diseases are caused by smoking; this time the organisers added sessions on smoking cessation to main sessions, thereby integrating this key issue into the main events. The authors from several European countries reported on trends of assistance with smoking cessation. There was a surprising difference between the approaches; Italy used far more medications and doctors in France gave little smoking cessation advice. Bottom line: new trends in smoking cessation suggest that fewer patients try stopping without assistance. Experimentation with e-cigarettes for the purpose of quitting increased from 4% to 11%.

Poster 1272

The use of new anticoagulants in CTEPH

Authors: Gavilanes F et al.

Summary: The safety and efficacy of DOACs (direct oral anticoagulants) for CTEPH (chronic thromboembolic pulmonary hypertension) was explored in this retrospective cohort analysis of 20 patients (18 in functional class II or III) followed for an average of 21 months; there were 16 rivaroxaban recipients, three dabigatran recipients and one apixaban recipient. Among patients who underwent PET (n=18), clinical, haemodynamic and functional improvements were seen; these patients were still receiving their DOACs at the time of reporting. There were no episodes of recurrent venous thromboembolism during follow-up. With respect to safety, there was a record of one major bleeding episode following a traumatic fall.

Comment: CTEPH and its management was a hot topic in Milan. It is arguably one of the most common and most underdiagnosed forms of pulmonary hypertension. Treatment options include an endarterectomy, balloon pulmonary angioplasty for inoperable disease and medical therapy. A mainstay of treatment is lifelong anticoagulation. A group from Brazil reported on a cohort of patients with CTEPH who were treated with new DOACs like dabigatran or rivaroxaban. Bottom line: this case series suggests that the use of new DOACs was safe in patients with CTEPH.

Poster 2409
E-Poster (pdf; 129KB)
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